

The Energy Report - a narrative

Clean Power for Our Planet - We Can Do It

It's imperative: The world needs to move from its current unsustainable energy paradigm to a future powered entirely by clean, renewable energy - coupled with substantial energy conservation and resource efficiency. Only this transition will avoid the very worst impacts of climate change. WWF's ground-breaking energy study - *The Energy Report* - shows that this future is within our reach, and how it can be achieved.

Increasingly, governments and businesses are questioning old-world, "business-as-usual" energy scenarios. This path, from the past, leads only to increasing risks of energy security, pollution, price volatility and catastrophic climate change. There are better options already available, and we must pursue these realistic alternatives. The world can no longer afford to hang-on to its old energy paradigm, and its dangerous dependence on fossil fuels.

The Energy Report, produced through a collaboration between WWF and energy consultancy Ecofys, breaks new ground in the energy debate. No other energy scenario has attempted anything similar: to articulate a feasible future scenario in which ALL of the world's energy supply is provided by renewable and sustainable sources by mid-century.

Most of the answers are already at our disposal. For example, if we were to annually insulate two per cent of existing buildings using 'low-energy-house' standards, energy demand would be significantly reduced, making it much easier to close the energy gap with renewable energy options. Is this even possible? Germany has already proven it is possible and has even gone one better. They have already achieved a three per cent building insulation rate. We need to apply this kind of progressive energy innovation throughout the world, with an equal focus on cooling.

It is possible in appliances too: refrigerators for instance have improved their energy efficiency by more than two thirds since the 1970s¹. In this new century, we need to do even better, and not just for fridges, but for all appliances.

Half of newly added power capacity is now renewable: for example, installed solar power is growing exponentially and has multiplied 50-times in the first decade of this century². However, clean renewables such as wind and solar do still not provide more than 3 per cent of global power. There is a long way to go still.

Investments into renewable energy are increasing sharply, with a six-fold increase in RES investments in the last five years.

It's time to change the 'old' paradigm for the energy industry and articulate a new pathway

¹ Global Status Report on Energy Efficiency, NRDC, LBNL.

² IEA 2010, REN 21, 2010.

for the future. *The Energy Report* provides a meticulously researched scenario into a truly alternative vision for the energy future, and what such a scenario implies for society at large.

In 2050, the dominant form of energy available to the consumer, wherever he or she lives, will be electricity. This highest value form of energy can be transported and applied relatively easily. Efficient electricity transmission will, however, mean investment in new, more efficient, 'intelligent' electricity grids – “smart grids”.

Maximum energy efficiency will be the rule for all economic and social activities.

We will also have to change the way we live. This might include making better, low-impact, transport choices; adapting the heating and cooling temperatures in our buildings; changing our diets to include less meat (for those high meat consumers amongst us) – which will “free-up” land for sustainable bioenergies; or setting and applying strict efficiency standards for all of our appliances and processes.

Because *The Energy Report* scenario only makes use of currently available technologies, it leaves considerable optimism for an even brighter future with the benefits of further innovation and research and development. Technologies for liquid fuels for example, could advance significantly from where they are today. We still haven't overcome the challenge of powering large ships or airplanes with electricity, which means we still need liquid fuel and, assuming continuous growth of this mode of transport, the only real renewable option available to us is biofuels. But are there better alternatives?

Last, but by far not least, there are still some 1.4 billion people without access to reliable electricity for essential services. Some 2.7 billion people depend on coal and unsustainable biomass stoves for cooking and eating - with up to 2.5 million deaths per year from toxic fumes. A world that wants to offer an equitable future for a projected nine billion people has to solve this problem on a sustainable basis.

Does it pay off financially? Yes, the 100 per cent renewable energy future articulated by Ecofys includes a net gain in the long term. And the returns may be even greater – as the scenario does not even take into account the additional costs that will originate from climate change impacts and potentially very high fossil fuel prices. However what must be provided first, through a combined effort of public and private partnerships, is a massive initial investment of up to €3.5 trillion a year. This money has to be invested now - to fund much-needed changes in our energy infrastructure. Some of this money is already available - a significant proportion of this 'start-up' funding could come from diverting funds currently used for fossil fuel subsidies - which amount to an estimated €500 - €700 billion per year depending on market fuel prices³.

The decision time is now - if we want to see real positive results by 2050. Climate change is an escalating problem with more and more greenhouse gases accumulating in the atmosphere every day. There is no time to lose. Every new investment decision made for the wrong type of energy infrastructure today, locks the world into a flawed energy scheme for decades to come.

The Energy Report is not about predictions. It's about articulating a calculated and ambitious

³ OECD.

pathway towards a possible, positive future - taking into account the necessity to act rapidly and decisively on climate change. It is REALISTIC in its conservative approach, its reliance only on existing technologies, and its clear identification of the challenges ahead. It is also OPTIMISTIC, because it shows that with manageable effort, we can transform our energy system in a third industrial revolution for the benefit of all.